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SUBJECT: Mongolia's Looming Mercury Pollution Crisis

REFS: (A) Ulaanbaatar 318, (B) Ulaanbaatar 578
(C) 05 Ulaanbaatar 624, (D) 05 Ulaanbaatar 621

11. Summary. The widespread use of mercury in the informal gold mining sector in Mongolia has produced a looming

environmental crisis. As many as 100,000 "ninja" miners -- 15-20% of them children -- now work in the sector, a number that

has sharply increased in the last five years. Illegal use of mercury is widespread, as is ignorance about the ill effects; one

study showed 77% of the miners used mercury in the family oven. The government lacks the capacity to test for mercury

pollution, so an accurate estimate of the problem is difficult. Three years ago, a survey in one area found one quarter of the

population already experiencing symptoms of mercury poisoning but, since mercury poisoning is a gradual process, experts

believe the full scale of the epidemic associated with the boom in informal mining will only emerge in the next 1-3 years.

Parliament may pass a law regulating the informal mining sector later this year, but experts are pessimistic it will end the

use of mercury by ninja miners. An embassy OES grant proposal is aimed at improving Mongolia's ability to test for mercury

pollution, and at raising awareness of the danger. End summary.

Formal Mining and Mercury: A Problem, But Not the Major One

12. A ban on mercury use in the early 1980s dramatically reduced the presence of mercury throughout Mongolia, including its

elimination from standard placer mining techniques. At present, illegal mercury use in formal placer mining is limited to some

Mongolian, Chinese and Korean companies.

13. In a recent discussion with emboff, Steve McIntosh of Boroo Gold noted changes in environmental assessments since Boroo

began operations in Mongolia in 2004. Local inspectors are using Boroo Gold as an example. They have learned to draft the

internationally standard Environmental Impact Assessment (EIA) reports required by Boroo Gold and have thus become more

familiar with international chemical standards. The hope is that this knowledge will travel to other mining regions and

gradually eliminate the lack of awareness that hampers enforcement

of the mercury ban in the formal sector.

¶4. However, McIntosh observed that weak enforcement capacity and corruption are problems. The government permits the

establishment of mining companies financially unable to adhere to international or even Mongolian local standards. Regardless

of their understanding of present environmental concerns, these companies lack the resources to use the correct equipment and

to adequately monitor the surrounding environment. In addition many small and medium-sized placer companies can easily conceal

their mercury pollution. These environmentally unsound practices persist because GOM environmental inspectors are quick to

forgo inspections for a bribe.

Informal Mining: A Boom Leads to Significant Abuse

¶5. Over the last five years the in the informal mining sector has sharply boomed, and brought with it a dramatic rise in

mercury use. While there are no firm figures, estimates of the number of informal miners -- generally termed "ninjas" because

of the green plastic tubs they carry on their backs -- have grown from 10,000 in 2000 to more than 100,000 people during the

summer months. By contrast, the formal mining industry employs 20,000 persons. By late spring, the ninja influx causes some

communities to more than triple from their resident populations. The ILO estimates that 10-15% of the miners are children. A

survey conducted by the Mongolian Business Development Agency (MBDA) identifies the south-central aimags -- Ovorkhangai,

Arkhangai and Bayankhongor Aimag -- as the main areas of activity. However, the problem extends to much more remote regions,

including fragile environmental areas in the Gobi, which are (in theory, at least) protected areas (refs c and d).

¶6. The growing number of "success stories" coming from the gold fields draws progressively more people. College students pan

for gold during the summer to cover next year's expenses. Other factors push large numbers of Mongolians toward informal

mining. Extreme winter temperatures, mass desertification, drought and wildfire have decreased the carrying-capacity of the

land throughout the country. Especially in years when large numbers of livestock die during the winter, herder families are

left looking for a source of income within the cities and the mining regions. Urban poor often look to mining for temporary

employment during the summer months.

Mercury Illegal, But Widely Available, Abused

¶7. Mercury is illegal in Mongolia, but it is easily purchased in communities near mining operations. An estimated ten tons is

imported each year with little or no understanding by the general population of the environmental health risks. Ironically,

success in combating mercury use elsewhere likely contributes to the problem here: mercury eliminated from China, Europe and

the United States serves to keep the Mongolian supply abundant and prices low.

¶8. While the availability of mercury facilitates continued illegal use in the formal mining sector, the real impact is in the

informal sector. One study indicated that 63% of artisanal miners store mercury in their homes, and 77% use the family oven or

frying pans to process ores with mercury. Artisanal miners often poison themselves by letting the chemical come into contact

with their bare skin, or wade in mercury contaminated water.

¶9. The mercury poisoning continues when the mixture is heated. The mercury is evaporated into the surrounding atmosphere to

separate out the gold, a process that contributes significantly to the mercury contamination of the soil and air. Geological

specialists believe it is only a matter of time before the mercury sinks and pollutes the aquifers, spreading the harm to

families uninvolved in informal mining, and to all the livestock in the area.

Scale of the Problem Not Measured

¶10. Mongolia's inability to evaluate current levels of mercury pollution poses a challenge in assessing the scale of the

problem and reporting it to national and international organizations. Ministry of Nature and the Environment (MNE) official

Sarantuya told emboff that the lack of laboratory resources exacerbates assessment challenges. Sarantuya complained that even

the central laboratory in Ulaanbaatar, the most technically advanced in the country, lacks adequate testing capacity.

Mongolia's only two labs that can test for mercury contamination are in Ulaanbaatar. Testing regimens require samples be kept

cold during transport. This is impossible because mining regions (and most of Mongolia for that matter) lack refrigerated

transport and other vital infrastructure.

¶11. MNE relies on a study conducted by the Japan International Cooperation Agency (JICA) in 2003 to determine mercury levels.

The study, however, is limited to the Boroo River valley, a mining region north of Ulaanbaatar. The JICA-funded study reported

26% of the survey population to be experiencing symptoms of mercury poisoning. The most common symptoms were rheumatism,

headaches, eye problems and kidney pains. 58% of a second survey population had urine whose mercury content was above the

normal level of 0.035 microgram/ml.

¶12. The Swiss government has funded the Support for Artisanal Mining Project (SAM) that will calculate mercury levels

throughout the country. The project will provide insight on the present state of the problem and determine future

environmental costs. An OES grant proposal by the Embassy (ref a) would add to this by funding mobile testing units near

informal mining areas.

A Looming Health Crisis

¶13. It's all too possible that Mongolia will soon have another means to measure mercury pollution: an explosion in mercury

poisoning cases. Mercury poisoning is a gradual process. Specialists predict that an epidemic will emerge within the next one

to three years because of the upsurge in informal mining in the last half decade. Exposure to elemental mercury affects

emotional stability and impairs muscular, sensory and cognitive abilities. High levels of mercury exposure can result in death

due to kidney or respiration failures. Reports of mercury poisoning in Mongolia are scarce due because local health officials

in affected rural communities do not know the signs.

The Legal Environment for Informal Mining

¶14. MNE officials acknowledge that current regulations on informal mining are inadequate. Local governments fail to monitor

artisanal mining activity beyond demanding a biweekly fee from each miner. With many miners refusing to pay such fees,

residents claim that police frequently resort to physical abuse rather than legal enforcement. These corrupt practices incite

hostility and future disregard for the law, further weakening the regulatory framework. Growing governmental concern has also

increased the incentive for small-scale miners to conceal their mercury usage.

¶15. Recent conflict between the ninjas and formal mining companies in Zaamar soum, a popular mining region northwest of

Ulaanbaatar, has strengthened support for new artisanal mining legislation (ref b). A draft law which may be considered by the

Fall session of the State Great Hural would allow for the legal licensing of individual miners. Juergen Hartwig, SAM project

advisor, told emboff that recognizing artisanal miners as licensed individuals rather than rogue ninjas will promote a more

formal and peaceable enforcement protocol. MNE also hopes the law will strengthen implementation of environmental controls

that they have not had the capacity to enforce in the past.

¶16. The law will also promote a more extensive infrastructure by encouraging mining communities to designate particular areas

and individuals responsible for specific activities. In theory, this would remove the mercury pollution from the immediate

living vicinity of the miners. However, SAM project advisor Hartwig believes such a shift is at present unfeasible due to the

convenience of current home-based extraction procedures and the abundance of artisanal miners to whom the new bill would apply.

Needed: Better Technology

¶17. The SAM project aims to reduce mercury pollution by introducing new mills and retorts. The project hopes to remove mills

now being used in ASM communities that effectively demand mercury. The new mills produce finer sediment while crushing the

ore, which would potentially eliminate the current dependence on mercury for creating the amalgam. The new retorts will

increase mercury recovery during the heating process so mercury is recycled rather than released into the environment -- and

the mills would remove the amalgam process from miners' homes.

Specialists note there should be an economic incentive to use the new technology, since it yields 95% of the gold in the soil, versus the 70% yield of current devices.

Needed: More Awareness Campaigns

¶18. Sans Frontiere Progres director Tumenbayar told emboff that education-based efforts are necessary to reduce the mercury

problem on a more immediate time scale. Tumenbayar worked with Peace Corps to develop a mercury awareness project in Bornuur

soum. School children learned mercury protection and prevention methods and produced a 2007 mercury awareness calendar. While

the project did not eliminate mercury use in the soum, project organizers believe that continuing education is crucial for

reducing the pollution. One part of the embassy's OES grant proposal is directed at working with Sans Frontiere Progres to

raise awareness of mercury dangers in artisanal mining areas among both the public and officials.

Slutz